(Fig. 27) that the flame follows the hearth of the furnace, if the furnace does not hold any ingots, and this is very nearly what may be actually seen in this furnace.

In the furnace at the Lyswa works (Fig. 28) there has been found to be a complete identity between the actual and calculated heights of the strangulating ridges in the roof above the hearth of the furnace (calculated value 539 mm; actual dimension 525 mm), but the dimension computed for the height at waste gas ports was considerably less than that in the furnace. When these conclusion had been reached, A. J. Onoufrowitch, managing director of the works in the Lyswa district, was asked the following questions regarding the details of the work of this furnace :

1. Have the strangulations in the roof any effect in forcing the hot gases down on the hearth of the furnace?
2. Do the gases seem to remain at a short distance above the hearth of the furnace at the waste gas end?

A reply was received giving the following facts concerning the record of this furnace:

The furnace had been originally constructed without strangulations and worked very badly. The managing director had then dropped portions of the roof a sufficient distance to bring the hot gases down to the hearth. He stated that he had been led by trial to give this lowered section a height of 525 mm (Fig. 28), the thickness of the layer of hot gases in the furnace chamber.

To the second question he replied that the furnace had not worked well at the end connected with the chimney (the rear end of the furnace), the hot gases seeking the roof. He proposed to correct this condition later by the removal of the present roof, replacing it by a horizontal roof 150 mm lower; Ayoo would then be equal to 500 mm.

This shows that Yesmann's formula has received a complete

confir furna other comparisons.

QQAfi

The "N" furnace heated £ = 1 . 3 1 times the weight of 2 16 ingots, but it consumed per second of fuel burned at Lyswa; that is to say, per unit weight of ingots,

2.77

the consumption of fuel was -^-^=*2.11* times greater in the

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